

Minocyclin

Broad spectrum tetracycline antibiotic for elimination of mycoplasmas

Substance	Cat#	Package size
Minocyclin solution (0.5mg/mL)	M3135.0050	1x50mL
Minocyclin solution (0.5mg/mL)	M3135.0100	1x100mL
Minocyclin solution (0.5mg/mL)	M3135.5001	50x1mL
Minocyclin solution (0.5mg/mL)	M3135.5005	50x5mL

Description

Minocycline hydrochloride, also known as minocycline, is a broad spectrum tetracycline antibiotic, and has a broader spectrum than the other members of the group. It is a bacteriostatic antibiotic. As a result of its long half-life it generally has serum levels 2-4 times that of most other tetracyclines (150mg giving 16 times the activity levels compared to 250mg of tetracycline at 24–48 hours). Minocycline was originally discovered by Lederle Laboratories and marketed under the brand name Minocin.

Minocycline is also used in cell culture applications to treat mycoplasma contaminated cell culture medium together with Tiamutine.

Mycoplasma elimination from contaminated cell culture medium by antibiotics

More than 20 different mycoplasma strains have been isolated. In more than 80% of all cases only one of the following strains has been identified in contaminated cell culture medium: *Acholeplasma laidlawii*, *Mycoplasma arginini*, *Mycoplasma hyorhinis* and *Mycoplasma orale*.

Most mycoplasmas found in contaminated cell culture medium are resistant against most antibiotics. This has not been found for two new antibiotics – Tiamutin and Minocyclin. The strong effect of both antibiotics is based on their good solubility in lipid layers and in their mode of action to inhibit protein biosynthesis.

Treatment of mycoplasma contaminated cell culture

Mycoplasma contaminated cell culture medium is alternately treated with Tiamutine (10µg/mL) for 4 days followed by Minocycline (5µg/mL) for 3 days, etc..

Treatment is carried out by adding Tiamutine stock solution (1mg/mL), respective Minocycline stock solution (0.5mg/mL) to the cell culture medium to a final concentration of 10µg/mL (Tiamutine), and 5µg/mL (Minocycline).

Success of the treatment procedure is controlled each cell culture passage by a mycoplasma test like fluorescent dye Hoechst 33258. After the first negative control, treatment has to be carried on for 2 weeks!

To prevent from a bacterial resistance, it is highly recommended not to use both antibiotics on a regular base, but only after acute treatment of mycoplasmas.

Application

1mL of each antibiotic solution (Tiamutine 1mg/mL and Minocycline 0.5mg/mL) are added to 100mL cell culture medium.

Specifications

Concentration (stock solution)	0.5mg/mL
Recommended working concentration	5µg/mL
Shelf life	6 months at -20°C
Storage temperature (solution)	-20°C